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FITZPATRICK CELLA HARPER & SCINTO			DIVINE, LUCAS	
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			2624	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/761,646

Applicant(s)

TSUNEKAWA, KIYOHIO

Examiner

Lucas Divine

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 15 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims call for selecting the first or second mode on a **'print job unit basis.'** The Examiner does not understand the criteria or basis for the mode selection because the term **'print job unit basis'** has not been defined or discussed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 – 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 9, and 10, all three claims include **'print data inputted from an outside'**. Claim 1: page 52 line 3; claim 9: page 55 line 1; and claim 10: page 55 line 24. This phrase does not particularly point out what **'an outside'** is or what it refers to. Appropriate action is required.

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Regarding claims 2 – 8, which depend from claim 1, these claims are rejected based on their dependency on the rejected independent claim 1.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The computer program claimed is merely a set of instructions per se. Since the computer program is merely a set of instructions not embodied on a computer readable medium to realize the computer program functionality, the claimed subject matter is non-statutory. See MPEP § 2106 IV.B.1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (US 5864732) in view of Okumura et al. (US 5465947) further in view of Kikuchi et al. (US 4330200) hereafter referred to as Kato, Okumura, and Kikuchi.

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Regarding claim 11, Kato teaches **an image processing apparatus 400 connected to an information processing apparatus** (remote client access via network as discussed in col. 12 lines 37-39) **and an image forming apparatus 40** as shown in Fig. 4, **comprising:**

receiving means for receiving print data from said information processing apparatus (col. 12 lines 37-39, wherein the apparatus may receive information via a network);

generating means for generating page image data on the basis of the print data received by said receiving means (col. 2 lines 10-11, wherein image data is generated by the image processing unit 400 before output to image forming apparatus);

holding means for holding the page image data generated by said generating means into an image memory (Fig. 4, RAM 403);

obtaining means for obtaining information indicative of a paper ejection ability of said image forming apparatus (col. 11 lines 20-21 teach the use of sensors to detect information indicative of full output bins 'paper ejection ability' that are received by the image processing apparatus 400 as shown in Fig. 4 and discussed in col. 7 lines 40-44); **and**

output means for outputting the page image data generated by said generating means to said image forming apparatus (Fig. 4 ref. no. 40, wherein the CPU 401 outputs data to the image forming unit for printing).

While Kato teaches a print processing system for printing and sorting of inputted print requests (Fig. 1 ref. no. 72) and a sorter 300 with sorting control process S17 for choosing sorting methods based on output sheet numbers vs. bin capacity (Fig. 10) and **based on information from the obtaining means** (col. 11 lines 19-24, wherein sorting will not output to

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full bins), Kato does not specifically teach using this control means for **selecting either a first output mode or a second output mode on the basis of copy No. information.**

Okumura teaches a print processing system for printing and sorting of inputted requests (Fig. 1) that has **and control means for selecting either a first output mode or a second output mode on the basis of copy No. information.** Fig. 18 shows sorter control 256 that performs the control steps of choosing a sort mode (Fig. 20, Set Sort Mode step S12, col. 12 lines 19-20) based on the number of copies being larger or smaller than the number of bins available (Fig. 20 ref. no. S10, col. 12 lines 15-17, wherein the number 20 is a sample number of output bins in a system).

It would have been obvious to one of ordinary skill in the art to base use the print copy number information of Okumura in the Kato print processing system. The motivation for doing so would have been to improve efficiency when executing a large number of copy jobs by allowing the calculations of print prediction calculations (Fig. 10 ref. no. S1701, col. 2 lines 15-19) of Kato to be more precise and therefore select the best bin sorting method (Figs. 10-13).

The combination of Kato and Okamura teaches using a sort method of printing each page of a job in each bin before moving to the second page (Kato, col. 1 lines 19-28). This meets the claimed 'second output mode' limitation, where **the page data is outputted in accordance with a plurality of ejection bins and outputting image data is executed the number of time as many as the number of pages to be outputted.**

The combination does not teach the use of the claimed 'first output mode' being a **process for outputting all pages of a first copy of the print data to a first paper ejection bin of said image forming apparatus and holding the generated page image data by said**

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holding means is executed and, thereafter, said held page image data is read out and second and subsequent copies of the print data are outputted to said first paper ejection bin or a paper ejection bin other than said first paper ejection bin.

Kikuchi teaches using a print processing system for printing and sorting of inputted requests (Fig. 1) that has multiple sorting modes (col. 1 lines 10-19) including **a process for outputting all pages of a first copy of the print data to a first paper ejection bin of said image forming apparatus and holding the generated page image data by said holding means is executed and, thereafter, said held page image data is read out and second and subsequent copies of the print data are outputted to said first paper ejection bin or a paper ejection bin other than said first paper ejection bin** (col. 1 lines 16-19 and discussed throughout as the 'assortment' or 'sorting' mode).

It would have been obvious to one of ordinary skill in the art to allow the sorting control unit of Kato in view of Okamura to select the sorting method of Kikuchi if the number of copies was more than the available bins. The motivation for doing so would have been to allow a user to get a quick copy of their print job if needed by printing a complete copy before moving to the second bin and to give a user more time to grab the first outputted copies. Thus if the number of print copies was larger than the number of bins the output unit can use the bins of completed and removed print copies.

Regarding claim 12, which depends from claim 11, the sensors of Kato obtain info **including information indicative of the number of usable paper ejection bins possessed by said image forming apparatus** by providing the user information about the 'paper ejection ability' of each bin as taught in col. 6 lines 33-36 and col. 11 lines 20-21.

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Regarding claim 13, which depends from claim 12 as it depends from claim 11, Okamura further teaches that **said control means selects said second output mode when the number of copies of the print data to be outputted is equal to or smaller than said number of usable paper ejection bins**. Okamura specifically teaches using different modes based on the number of copies to be made vs. the number of usable bins (Fig. 20 step S10). This includes setting different modes depending on the comparison (steps S11 and S12). If the number of copies is not greater than usable bins, step S12 uses the default mode. The default mode would have been to use the (second) page output mode, which is the standard mode of outputting in the system of Kato as discussed in the rejection of claim 11.

Regarding claim 14, which depends from claim 12 as it depends from claim 11, Kikuchi further teaches that **said control means selects said first output mode when the number of copies of the print data to be outputted is larger than said number of usable paper ejection bins**. In col. 1 lines 29-31 Kikuchi states 'usually, a person using such copying machine in a collation or assortment mode causes it to repeated a second series of copying cycles after first repeated cycles.' This implies that the number of copies to be made can not be completed in a single 'cycle' of printing to output bins. Thus Kikuchi teaches the use of the claimed 'first' mode if the number of copies is more than the number of usable output bin. This can be selected through comparison system of Okamura (step S12 of Fig. 20).

Regarding claim 15, which depends from claim 11, the comparison of Okumura executes the comparison of number of copies versus the number of available bins for each job that arrives, thus on a **print job unit basis**. Thus, Okamura teaches the limitation of **said control means**

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executes the process for selecting either said first output mode or said second output mode on a print job unit basis.

Regarding claim 16, the structural elements of apparatus claim 11 perform all of the steps of method claim 16. Claim 16 is therefore rejected for the reasons stated in the rejected claim 11. For example, the RAM 403 of Kato performs a holding step, and CPU 401 of Kato outputs to image forming unit 40 performing an outputting step. Subsequent steps rejected using same analysis based on the rejection of claim 11.

Regarding claim 17, which depends from claim 16, the structural elements of claims 11 and 12 perform all of the steps of method claim 17. Claim 17 is therefore rejected for the reasons stated in the rejection of claim 12 as it depends from rejected claim 11.

Regarding claim 18, which depends from claims 16 and 17, the structural elements of claims 11, 12, and 13 perform all of the steps of method claim 18. Claim 18 is therefore rejected for the reasons stated in the rejection of claim 13 as it depends from rejected claims 11 and 12.

Regarding claim 19, which depends from claims 16 and 17, the structural elements of claims 11, 12, and 14 perform all of the steps of method claim 19. Claim 19 is therefore rejected for the reasons stated in the rejection of claim 14 as it depends from rejected claims 11 and 12.

Regarding claim 20, which depends from claim 16, the structural elements of claims 11 and 15 perform all of the steps of method claim 20. Claim 20 is therefore rejected for the reasons stated in the rejection of claim 15 as it depends from rejected claim 11.

Regarding claims 21 and 22, the operation of the computer program claim 21 performs the steps of method claim 16 within a computer readable medium. Therefore, claims 21 and 22 are rejected for the reasons stated in the rejection of method claim 16. Kato further teaches the

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use of a processor 401 capable of performing the method steps as claimed in claim 16 as well as RAM 403 and ROM 404 to store the necessary program data and steps (col. 7 lines 20-44 and throughout Kato).

4. Claims 1 – 5 and 9 –10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Okamura.

Regarding claim 1, the Kato teaches **an image processing apparatus 100 for outputting a page image corresponding to print data inputted from an outside, comprising:**

analyzing means for analyzing said print data at the time of outputting a first copy and generating a page image (In col. 12 lines 37-40, Kato teaches receiving digital print data via a network. In col. 2 line 10, Kato teaches the forming of images on recording sheets based on document images. Thus, the taught apparatus inherently includes the functionality to analyze incoming print jobs and generate document images from print data.);

image spooling means for holding said page image at the time of outputting the first copy (RAM 403 completes holding function which is an equivalent to the storing hard disk of specification page 2 line 10);

page image reading means for reading out said spooled page image at the time of outputting second and subsequent copies (CPU 401 performs data reads and writes to RAM 403 including the ability to read out stored document images for transmitting to the image forming unit 40);

mechanical sorting means for performing mechanical sorting and paper ejection every copy (Fig. 1 ref. no. 72, col. 5 lines 51-61);

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discriminating means for discriminating whether said mechanical sorting means can be used or not and discriminating the maximum number of sorting page images which can be processed at once by said mechanical sorting means (CPU 401 reads inputs from sensor SE18 – col. 11 lines 20-21 – that tells the system there are pages in the bin, this information allows the CPU 401 to discriminate which bins can be used and the maximum number of that bins can be used to place output copies. Thus, the CPU 401 discriminates whether or not the mechanical sorting means can be used for sorting or not.);

While Kato teaches a printing system for the reception, printing, and sorting of information and making sort decisions based on the **discrimination result of said discriminating means**, Kato does not teach specifically **a switching means for, when a plural copy print is designated, discriminating whether said image spooling means and said page image reading means are used or not in accordance with a the designated number of copies.**

Okamura teaches a printing system (Fig. 1) for the reception, printing, and sorting of information including **a switching means for, when a plural copy print is designated, discriminating whether said image spooling means and said page image reading means are used or not in accordance with a the designated number of copies.** Fig. 20 step S10 of Okamura teaches a switching step executed in a sorter control unit 256 that switches whether or not the sorting operation is used based on number of copies (col. 12 lines 15-17), which in turn designates whether or not the image spooling means and page image reading means are used. For example, if the number of copies is larger than the number of bins, the image processing apparatus prints as many as it can, but then must store the image data in a storage means until it can print again, thus reading it back out of the storage means.

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It would have been obvious to one of ordinary skill in the art to perform the switching task on Okamura in the print sorting system of Kato. The motivation for doing so would have been to use memory more effectively and print faster because the system of Kato would be able to calculate how many output bins are available and compare it to how many output copies were set. If the number of bins was greater, it would not have to spend the time saving the data to memory before printing. If the number of bins was less, it would then utilize the spooling and reading means for saving and reading the image data with memory to finish the print job at a later time (when jobs were removed from the bins). Thus, memory is only used when necessary, saving time and memory space.

Regarding claim 2, which depends from claim 1, the rejection of claim 1 above discusses the reasons for adding Okumura's switching means to the system of Kato. One of these includes **the case where it is determined said discriminating means that said mechanical sorting means cannot be used or in the case where a print of the number of copies larger than the maximum number of sorting page images which can be processed at once by said mechanical sorting means is designated, said switching means allows the plural copy print to be executed by using said image spooling means and said page image reading means.** Thus, claim 2 is rejected based on this functionality discussed in the rejection of claim 1.

Regarding claim 3, which depends from claim 2 as it depends from claim 1, Kato further teaches that **when a paper ejection mode is not a continuous sort, even if the print of the number of copies which is equal to or smaller than the maximum number of sorting page images which can be processed at once by said mechanical sorting means is designated, said switching means uses said image spooling means and said page image reading means.** Kato

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teaches the detection of paper jams in the printing system (col. 7 line 43). If a paper jam occurs, it would make the current print job non-continuous. It would have been obvious to one of ordinary skill in the art that the invention of Kato uses the spooling 'holding' and page image 'reading' means if a paper jam occurs to enable the job to finish printing at a later time.

Regarding claim 4, which depends from claim 1, Kato teaches a system **further comprising:**

print data spooling means for holding said print data as much as at least one job (RAM 403);

print data (col. 2 line 51, inputted by user via network) reading means for reading out said print data stored in said print data spooling means (CPU 401 reads and writes to RAM 403) a predetermined number of times (number of copies), and

wherein when said image spooling means and said page image reading means are not used, said plural copy print is performed by using said print data reading means (used when generating means generate image data and print the image data without spooling to image spooling means, as in cases of continuous printing where the number of copies is less than number of bins).

Regarding claim 5, which depends from claim 4 as it depends from claim 1, Kato further teaches that **in the case where said mechanical sorting means can be used, said print data reading means reads out the print data each time the page images of the maximum number of sorting page images which can be processed at once by said mechanical sorting means are outputted.** Each time a new page must be generated by said generating means discussed in the rejection of claim 1, the print images must be generated from inputted print data for the

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specific page. Thus, the print data is read from the spooling means in order to have image data be generated by the generating means whenever a new page must be generated. This occurs when the page before the current page has is completing 'page image of the maximum number' when the sorting means can be used (when the number of copies is less than the number of bins).

Regarding claim 9, the structural elements of apparatus claim 1 perform all of the steps of method claim 9. Claim 9 is therefore rejected for the reasons stated in the rejected claim 1.

Regarding claim 10, the operation of the program storage medium of claim 10 performs the steps of method claim 9 within a computer readable medium. Therefore, claim 10 is rejected for the reasons stated in the rejection of method claim 9. Kato further teaches the use of a processor 401 capable of performing the method steps as claimed in claim 9 as well as RAM 403 and ROM 404 to store the necessary program data and steps (col. 7 lines 20-44 and throughout Kato).

5. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Okumura as applied to claims 1 – 5 above, and further in view of Gerstenberger (US 6483604).

Regarding claim 6, which depends from claim 1, Kato teaches all of claim 1 as discussed in the rejection of claim 1 above.

While Kato discloses a image printing system with image data storage, Kato does not expressly disclose that **said image spooling means holds the page images compressed in a predetermined format.**

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Gerstenberger discloses a printing apparatus with image data storage that includes storing **page images compressed in a predetermined format** (Fig. 2, col. 2 lines 26-28).

It would have been obvious to one of ordinary skill in the art to include the compression setup of Gerstenberger in the spooling 'holding' means of Kato. The motivation for doing so would have been to save space in the spooling means, which becomes very important in imaging systems, where decompressed images can be very large.

Regarding claim 8, which depends from claim 1, Gerstenberger **further discloses that said page image reading means outputs the page image compressed by a predetermined format while decompressing it** (Fig. 2 ref. no. 30, col. 2 lines 32-36, wherein the decompressor decompresses image data for output).

6. Claim 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato in view of Okumura as applied to claims 1 – 5 above, and further in view of Shima et al. (US 6104498) hereafter referred to as Shima.

Regarding claim 7, which depends from claim 1, Kato teaches all of claim 1 as discussed in the rejection of claim 1 above.

While Kato teaches a printing system that printing pages one by one into the sorting means, Kato does not specifically teach that **said page image is a set of image data obtained by dividing one page into a plurality of band-like images or image data as much as one page**.

Shima teaches a printing system (Fig. 2) where a **page image is a set of image data obtained by dividing one page into a plurality of band-like images or image data as much**

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as one page (intermediate print information of Fig. 4 and discussed in col. 3 line 60 and col. 5 lines 27-28, wherein page data is divided into a plurality of band-like images).

It would have been obvious to one of ordinary skill in the art to generate the print image data of Kato in bands as in Shima. This would allow the system to process smaller pieces of data at a time, further allowing the generating means to work more flexibly with the print data. The motivation for doing so would have been to print the desired page in the minimum time with the minimum CPU wait times.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Barry et al., US 6633396, 10-14-2003: teaches a print system including the receiving, spooling, rasterizing, storing, dividing into individual jobs, and outputting to bins of print jobs.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucas Divine whose telephone number is 703-306-3440. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

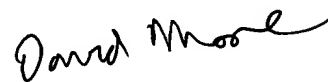
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on 703-308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucas Divine
Examiner
Art Unit 2624

ljd



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